



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,245	04/16/2007	Seong-Soo Park	4900-06091733	9705

22429 7590 08/18/2009
LOWE HAUPTMAN HAM & BERNER, LLP
1700 DIAGONAL ROAD
SUITE 300
ALEXANDRIA, VA 22314

EXAMINER

SARWAR, BABAR

ART UNIT	PAPER NUMBER
----------	--------------

2617

MAIL DATE	DELIVERY MODE
-----------	---------------

08/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,245	Applicant(s) PARK ET AL.	
	Examiner BABAR SARWAR	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed **05/27/2009** have been fully considered but they are not persuasive.
2. **Claims 1, 7, and 14** have been amended.
3. **Claims 1-19** are currently pending.

The applicant argues about the features wherein a handoff scheme is employed to make a handoff decision depending upon whether the link quality of an alternative link is above or below a reference value in connection with the alternative link; receiving a signal from a portable Internet network having coverage wider than the WLAN and performing handoff to the portable internet if the link quality of the received portable internet is higher than a second reference value; receiving a signal from a WLAN having coverage narrower than that of a portable Internet and performing handoff to the WLAN if the link quality of the WLAN is higher than a first reference value, read upon Moon as follows;

Moon discloses establishing an optimal quality wireless communication link with a mobile station; monitoring the link quality; determining if the link quality (a primary communication link quality) has decreased below a link quality threshold; and establishing, based on the link quality, a second communication link using one or more metrics. Moon further discloses that internetwork topology will change as the available communication links with mobile station change. The internetwork topology information along with one or more metrics is used to determine the optimal path/link over which

Art Unit: 2617

communication between the mobile station and destination is established as disclosed in **Col. 8:23-42**. Moreover Moon's method also discloses that in selecting the communication path/link, the quality of various communication links is evaluated. The link quality of existing links is periodically evaluated or determined using the metrics and re-routing/handoff decisions are made. If the link quality is below the high link quality threshold, the alternative communication link is established i.e. the alternative communication link is better than the primary communication link, therefore the alternative communication link quality is monitored and evaluated as well. The handoff is performed based on whether or not the alternative link quality is above to the high link quality threshold as disclosed in **Col. 13:14-57, Figs. 4, 5**. Thus Moon shows the limitation of "a handoff scheme is employed to make a handoff decision depending upon whether the link quality of an alternative link is above or below a reference value in connection with the alternative link."

Moon further discusses a heterogeneous communication system wherein the mobile station being able to communicate with a plurality of wire and wireless communication networks for example IP network (an IP LAN, an IP WAN, or the Internet), WLAN, PSTN, GPRS and cellular networks. Moon discloses a heterogeneous handoff scheme as exhibited in **Figs. 2-5**. Moon's heterogeneous handoff scheme determines potential communication paths/links based on topology; determines appropriate metrics relating to each communication path and selects communication path based on the metrics as discussed in **Fig. 4**. Moon discloses that the link quality of the primary link is monitored, as it goes below the high quality threshold, the alternative

Art Unit: 2617

link is selected i.e. comparison is performed if the alternative link is better or not. The handoff takes place, and the alternative link quality is monitored and evaluated as well. As the handoff scheme determines that the previous primary link quality has become better or is higher than the high quality link threshold, the alternative link is abandoned and handoff scheme goes back to the previous primary link. Therefore the heterogeneous handoff scheme monitors and determines the optimal path/link based on the changes that occur in the heterogeneous communication systems as exhibited in various steps in **Figs. 4-5**. Thus Moon shows the limitation of “receiving a signal from a portable Internet network having coverage wider than the WLAN and performing handoff to the portable internet if the link quality of the received portable internet is higher than a second reference value; receiving a signal from a WLAN having coverage narrower than that of a portable Internet and performing handoff to the WLAN if the link quality of the WLAN is higher than a first reference value.”

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by

Moon et al. (US Patent: 6,804,532 B1), hereinafter referenced as Moon.

Consider **claims 1, 7, 14**, Moon discloses a mode switching method [[for]] of a multi-mode multi-band mobile communication terminal in a multi-access communication network, the multi-mode multi-band mobile communication terminal having modems for communication with a plurality of communication networks having different coverages, comprising **(Fig. 2, where Moon discloses a heterogeneous communication system wherein the mobile station being able to communicate with a plurality of wire and wireless communication networks, therefore a multi-mode multi-band mobile communication terminal in a multi-access communication network)**; the first step of calculating link quality of a Wireless Local Area Network (WLAN) in which the mobile communication terminal is currently located **(Col. 13:14-33, Fig. 5 step 180, where Moon discloses monitoring and determining the primary link quality)**; the second step of comparing the link quality calculated at the first step with a first reference value preset in connection with the WLAN **(Col. 13:34-40, Fig. 5 step 182, where Moon discloses monitoring and determining if the primary link quality is below a high quality threshold, therefore comparing the link quality calculated at the first step with a first reference value)**; the third step of measuring a signal from a portable Internet having coverage wider than that of the current communication network **(Col. 13: 34-57, Fig. 5 steps 180-184, where Moon discloses establishing an alternative link/path, i.e. the link quality is better than the primary quality link, therefore, measuring a signal from a portable Internet having coverage wider than that of the current communication network)** if, as a result of the comparing at the second step, it is determined that the link quality of the WLAN is lower than the first reference

Art Unit: 2617

value; the fourth step of calculating link quality of the portable Internet; and the fifth step of switching a mode of the mobile communication terminal to perform handoff to the portable Internet if it is determined that the link quality of the portable Internet calculated at the fourth step is higher than a second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses establishing an alternative link/path, therefore, determining that the link quality of the WLAN is lower than the first reference value, the link quality of the portable Internet is higher than a second reference value and handing off based on the link quality determination i.e. the alternative link is monitored, evaluated, compared and then handoff takes place**).

Consider **claim 2**, Moon discloses everything claimed as implemented above (see claim 1). In addition, Moon discloses that determining whether the link quality of the WLAN is higher than the second reference value if the signal from the portable Internet has not been measured at the third step; and maintaining communication with the WLAN if, as a result of the determination, the link quality of the WLAN is higher than the second reference value (**Col. 13:14-57, Fig. 5 steps 180-182, where Moon discloses monitoring and determining the primary link quality and maintaining the primary link if the link quality does not go below a high quality threshold**).

Consider **claim 3**, Moon discloses everything claimed as implemented above (see claim 2). In addition, Moon discloses that switching the mode of the mobile communication terminal to perform handoff to the mobile communication terminal if the link quality of the WLAN is not higher than the second reference value (**Col. 13:14-57, Fig. 5 steps 180-184, where Moon discloses monitoring and determining the**

primary link quality and switching to an alternative communication link if the link quality goes below a high quality threshold).

Consider **claim 4**, Moon discloses everything claimed as implemented above (see claim 1). In addition, Moon discloses determining whether the link quality of the WLAN is higher than the second reference value if the link quality of the portable Internet calculated at the fourth step is not higher than the second reference value; maintaining communication with the WLAN (**Col. 13:14-57, Fig. 5 steps 180-182, where Moon discloses monitoring and determining the primary link quality and maintaining the primary link if the link quality does not go below a high quality threshold**) if, as a result of the determination, the link quality of the WLAN is higher than the second reference value; and switching the mode of the mobile communication terminal to perform handoff to the mobile communication network if the link quality of the WLAN is not higher than the second reference value (**Col. 13:14-57, Fig. 5 steps 180-184, where Moon discloses monitoring and determining the primary link quality and switching to an alternative communication link if the link quality goes below a high quality threshold**).

Consider **claim 5**, Moon discloses everything claimed as implemented above (see claim 1). In addition, Moon discloses wherein the link quality is a data transmission rate of a corresponding communication network based on a Packet Error Rate (PER) (**Col. 10; 9-19, where Moon discloses link quality indicators BER RSSI**).

Consider **claim 6**, Moon discloses everything claimed as implemented above (see claim 1). In addition, Moon discloses wherein the reference value is a minimal

effective transmission rate of a current communication network (**Col. 13:14-33, Fig. 5, where Moon discloses monitoring and determining the primary link quality depending on the link quality threshold**).

Consider **claim 8**, Moon discloses everything claimed as implemented above (see claim 7). In addition, Moon discloses measuring a signal from a portable Internet if the signal from the WLAN has not been measured at the first step; calculating link quality of the measured signal; determining whether the link quality of the WLAN is higher than a second reference value preset for a corresponding communication network if the link quality of the signal is not higher than the second reference value and not lower than the first reference value; and switching the mode of the mobile communication terminal to perform handoff to a mobile communication network if the link quality of the WLAN is not higher than the second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Consider **claim 9**, Moon discloses everything claimed as implemented above (see claim 8). In addition, Moon discloses switching the mode of the mobile communication terminal to perform handoff to the WLAN if the link quality of the WLAN is higher than the second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Consider **claim 10**, Moon discloses everything claimed as implemented above (see claim 7). In addition, Moon discloses measuring a signal from a portable Internet if,

Art Unit: 2617

as a result of the comparison at the third step, the link quality of the WLAN is not higher than the first reference value; calculating link quality of the measured signal; determining whether the link quality of the WLAN is higher than a second reference value preset for a corresponding communication network if the link quality of the signal is not higher than the second reference value and not lower than the first reference value; and switching the mode of the mobile communication terminal to perform handoff to a mobile communication terminal if the link quality of the WLAN is lower than the second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Consider **claim 11**, Moon discloses everything claimed as implemented above (see claim 10). In addition, Moon discloses switching the mode of the mobile communication terminal to perform handoff to the WLAN if the link quality of the WLAN is higher than the second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Claim 12, as analyzed with respect to the limitations as discussed in claim 5.

Claim 13, as analyzed with respect to the limitations as discussed in claim 6.

Consider **claim 15**, Moon discloses everything claimed as implemented above (see claim 14). In addition, Moon discloses switching the mode of the mobile communication terminal to perform handoff to the WLAN if, as a result of the comparison at the third step, the link quality of the WLAN is higher than the first

Art Unit: 2617

reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Consider **claim 16**, Moon discloses everything claimed as implemented above (see claim 14). In addition, Moon discloses determining whether the link quality of the WLAN is higher than the second reference value if the signal from the portable Internet has not been measured at the fourth step; switching a mode of the mobile communication terminal to perform handoff to the WLAN if the link quality of the WLAN is higher than the second reference value; and maintaining communication with the mobile communication network if the link quality of the WLAN is not higher than the second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Consider **claim 17**, Moon discloses everything claimed as implemented above (see claim 14). In addition, Moon discloses determining whether the link quality of the WLAN is higher than the second reference value if the link quality of the portable Internet calculated at the fifth step is not higher than the second reference value; switching a mode of the mobile communication terminal to perform handoff to the WLAN if the link quality of the WLAN is higher than the second reference value; and maintaining communication with the mobile communication network if the link quality of the WLAN is not higher than the second reference value (**Col. 13:14-67, Col. 14: 1-26, Fig. 5 steps 182-198, where Moon discloses various steps of handing off based on the link quality**).

Claim 18, as analyzed with respect to the limitations as discussed in claim 5.

Claim 19, as analyzed with respect to the limitations as discussed in claim 6.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BABAR SARWAR whose telephone number is (571)270-5584. The examiner can normally be reached on MONDAY TO FRIDAY 09:00 A.M -05:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NICK CORSARO can be reached on (571)272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BABAR SARWAR/
Examiner, Art Unit 2617

/BS/

/NICK CORSARO/
Supervisory Patent Examiner, Art Unit 2617